

REMARKS

By the present amendment, the specification and abstract have been amended to correct several apparent typographical errors, adopt the suggestions of the examiner and/or to improve their presentation. In addition, independent claims 1 and 6 have been amended to obviate the examiner's objections thereto and/or to further clarify the concepts of the present invention.

More particularly, claims 1-6 have been amended to, among other things, to recite that the shape of the hole of the iris plates as a "circular hole" in order to further distinguish the presently claimed invention from the cavity resonator disclosed by the cited Shimizu et al patent. The shape of the hole is suggested by the term "hole diameter" of the iris plate described in the paragraphs [0027] and [0028] of the subject specification. Entry of these amendments is respectfully requested.

In the Office Action, it was noted that the listing of references in the subject specification was not a proper information disclosure statement and thus, unless submitted in the proper manner according to Patent Office regulations, would not be considered by the examiner. By an Information Disclosure Statement submitted concurrently herewith, all of the references listed in the subject specification have been cited therein.

The Abstract and specification were objected to as containing the various noted informalities. The Abstract and specification have been amended as suggested.

The drawings were objected to for not showing all of the features as recited in the claims. Specifically, it was required that (a) the iris plates arranged vertically in Figure 1 and (b) the tube axis at mid-points of the waveguide be shown in Figures 1-3. In so doing, it was asserted that these features of the invention as claimed are not shown in the drawings.

In response, it is submitted that the requirements to show these features that are not accurate and are due to the language as used in the claims. Claims 1 and 6 have been amended so there is no need to show these features in the drawings.

Claims 1 and 6 were objected to as containing the noted informalities. It is submitted that the amended claim language is responsive to these objections.

Claims 1, 6, 9, 10 and 17 were rejected under 35 USC § 103(a) as being unpatentable over the patent to Sasaki in view of the patent to Shimizu et al. Specifically, it was asserted that the disclosure of the Sasaki patent allegedly teaches the entire measuring method as defined by independent claim 1 and the entire moisture content measuring device as recited in independent claim 6 with two exceptions. In particular, it

was acknowledged that the Sasaki patent does not teach a device which includes two single holed iris plates which are (1) arranged within the wave guide as recited and (2) divide the wave guide into resonator portions and traveling wave portions. The Shimizu et al patent was then alleged to supply the noted teaching deficiencies. Reconsideration of this rejection in view of the above claim amendments and the following comments is respectfully requested.

Before discussing the rejection in detail, a brief review of the presently claimed invention may be quite instructive. An object of using a microwave cavity resonator provided with iris plates according to the presently claimed invention is to raise the Q value in order to provide measurements with high accuracy. Conventional normal cavity resonators as illustrated in the cited references Japanese Patent Application Laid Open No. 62-169041 or Japanese Examined Patent Publication No. 6-58331, which are cited in the subject specification and submitted with the concurrently filed Information Disclosure Statement, do not have iris plates. Consequently, these resonators have low Q values failing to provide measurements with high accuracy as is set forth in paragraph [0008] of the present specification. It is submitted that the patents to Sasaki and Shimizu et al, whether taken singly or in combination, do not teach or suggest the presently claimed invention.

It was acknowledged in the rejection that the Sasaki patent does not teach a device which includes two single holed iris plates which are (1) arranged within the wave guide as recited and (2) divide the wave guide into resonator portions and traveling wave portions. The Shimizu et al patent allegedly supplied these deficiencies.

However, the Shimizu et al patent only discloses a variable coupling structure for tuning a microwave resonator, but does not disclose raising the Q value. In the Shimizu et al patent, implementation of the variable coupling technique is accomplished by providing a basic elliptical iris aperture 25 in each iris plate 21 (cavity end wall). Any desired coupling, between maximum and minimum design values, may then be obtained by merely rotating one of the waveguide portions with respect to the other portion. This relative rotation provides a variable, relative axis relationship between the elliptical apertures defining the cavity section 23. By rotating the portions 17 and 19 so that the major axes of the two iris elliptical apertures defining the cavity section 23 are orthogonal to each other, a minimum coupling value is obtained. Relative rotation of the portions will gradually increase coupling to a maximum value when the major axes are in the same plane with each other and the E field, as illustrated in FIG. 3 and as disclosed in col. 3, lines 31-54 of the Shimizu et al patent.

In view of the above, it is submitted that one of ordinary skill in the art would not be led to combine the teachings of the two patents in the manner in which was done in the rejection. While the Sasaki patent does appear to disclose the use of the introduction of

a microwave signal into a cavity resonator for determining the moisture content of a sheet-like object, in distinct contrast, the Shimizu et al patent only discloses a variable coupling structure for tuning a microwave resonator having a pair of iris plates. Therefore, the Shimizu et al patent provides no teachings to one of skill in the art as to the particular utility of this type of resonator.

Thus, it is submitted that one of ordinary skill would not be motivated to use the microwave resonator as taught by the Shimizu et al patent in a device for measuring moisture such as the Sasaki patent. It is well established principle of U.S. patent practice that the prior art must contain some suggestion for combination since, without such, any combination is pure speculation on the part of the examiner and is based on a prohibited hindsight reconstruction from applicants' own disclosure.

For the reasons stated above, withdrawal of the rejection under 35 U.S.C. § 103(a) and allowance of claims 1, 6, 9, 10 and 17 over the cited patents are respectfully requested.

Dependent claim 5 was rejected under 35 USC § 103(a) over the above cited patents to Sasaki and Shimizu et al in view of the '067 patent to Fitsky. Additionally, dependent claim 7 was rejected under 35 USC § 103(a) over the patents to Sasaki and Shimizu et al in view of the patent to Kich et al. Also, dependent claim 8 has been rejected

under 35 USC § 103(a) over the patents to Sasaki and Shimizu et al in view of the patent to Nagata et al. Further, dependent claim 12 has been rejected under 35 USC § 103(a) over the patents to Sasaki and Shimizu et al in view of the patent to Maeno et al and dependent claims 13 and 14 have been rejected under 35 USC § 103(a) over the patents to Sasaki and Shimizu et al in view of the patent to Maeno et al and the previously cited patent to Fitsky. Reconsideration of these rejections in view of the above claim amendments and the following comments is respectfully requested.

The above remarks relative to the teaching deficiencies of the cited patents to Sasaki and Shimizu et al are reiterated with regard to these rejections. It is submitted that the patents to Fitsky, Kich et al, Nagata et al, Maeno et al do not supply these teaching deficiencies, particularly with respect to motivation of one of ordinary skill in the art to combine such teachings.

For the reasons stated above, withdrawal of the rejections under 35 U.S.C. § 103 and allowance of claims 5, 7 and 12-14 over the cited patents are respectfully requested.

Applicants acknowledge with appreciation the indication that claims 2-4, 11, 15, 16 and 19 would be allowable if rewritten in independent form to include all the limitations of the base claim and any intervening claim.

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In view of the foregoing, it is submitted that the subject application is now in condition for allowance and early notice to that effect is earnestly solicited.

In the event this paper is not timely filed, the undersigned hereby petitions for an appropriate extension of time. The fee for this extension may be charged to Deposit Account No. 01-2340, along with any other additional fees which may be required with respect to this paper.

Respectfully submitted,

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